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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/711,440	11/13/2000	David Lipson	2	7710

7590 07/12/2005

Peter Forrest  
7330 Bancroft Way  
Inver Grove Heights, MN 55077-3115

EXAMINER
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JUNG, WILLIAM C

ART UNIT	PAPER NUMBER
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3737

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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**Office Action Summary**

Application No.

09/711,440

Applicant(s)

LIPSON ET AL.

Examiner

William Jung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 April 2005.  
 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1,2,4-13 and 15-18 is/are rejected.  
 7) ☒ Claim(s) 3 and 14 is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
     Paper No(s)/Mail Date \_\_\_\_\_.  
 4) ☐ Interview Summary (PTO-413)  
     Paper No(s)/Mail Date \_\_\_\_\_.  
 5) ☐ Notice of Informal Patent Application (PTO-152)  
 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed April 8, 2005 have been fully considered but they are not persuasive.

In response to the applicant's remark, Examiner respectfully disagrees. The Applicant's remarks page 2, paragraph 3, that Taenzer does not disclose a process or method of dynamic coupling as stated in the office action. Ragauskas et al teach the dynamic coupling, where the alignment screws 98.1 and 98.2 are used to couple the ultrasound transducer to the skull (in Ragauskas's example in figure 2 shows over the eye). And according to the specification as relied upon by the applicant's remarks (specification pages 10-11) where the dynamic coupling is could be done by permitting the transmitter/receiver to move. The applicant also discloses that the coupling of ultrasound transducer involves coupling medium, which works in conjunction with vacuum. In both Taenzer and Ragauskas et al the ultrasound transducer is coupled with acoustic coupling medium, which has vacuum pump to change the pressure thereby dynamically affecting the acoustic coupling. Furthermore, Ragauskas et al's disclosure of screw pins clearly anticipates permitting the transmitter/receiver to move. Therefore, Taenzer and Ragauskas et al meets all claimed features in claims 1, 2, and 4.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 4, 5, 11-13, 15, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Taenzer* (US 4,237,901) in view of *Ragauskas et al* (US 5,951,477).

Taenzer et al substantially disclose all claimed features in claims 1, 2, 4-13, and 15-18.

*Claims 1, 2, and 11:* Taenzer discloses an ultrasound transducer dynamically coupled to a patient to measure vascular health to diagnose cardiovascular diseases such as heart attacks and strokes by determining the blood velocity (flow) and pressure (col. 1, line 43 – col. 2, line 60). However Taenzer does not disclose that the dynamic coupling of the transducer is made to a skull. Ragauskas et al teach that the ultrasound transducer is coupled to the skull to image and diagnose blood vessels and blood velocity to determine intracranial blood pressure (col. 1, line 55 – col. 2, line 39; col. 2, line 59 – col. 4, line 22). Although Taenzer does not specify the exact location of the transducer coupling to a skull it is well known in the art as evidenced by Ragauskas et al to couple the ultrasound transducer to a skull. Therefore, it would have been obvious to one having an ordinary skill in the art at the time the invention was made to *apply Taenzer's teaching to Ragauskas et al's*.

*Claim 4 and 5:* Ragauskas et al ('477) disclose image processing and image display 94 of the ultrasound data acquired from the method and apparatus described above as shown in figure 1.

*Claims 12, 13, 15, and 18:* Ragauskas et al ('477) further teach that the ultrasound transducer 30 can be coupled to the ocular opening of the skull as shown in figure 1 along

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with coupling medium 28. The transducer is designed to measure the ICP via flow inside the optic artery (col. 1, line 60 – col. 2, line 10).

4. Claims 6-10, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Taenzer* and *Ragauskas et al* as applied to claim 4 above, and further in view of *Ragauskas et al* (US 5,388,583).

Taenzer and Ragauskas et al ('477) substantially disclosed all claimed features in claims 6-10, 16, and 17. However, neither Taenzer nor Ragauskas et al defined the diagnosing of the stroke with specific labeling of normal or abnormal blood flow to assess the stroke.

*Claims 6-10:* Ragauskas et al ('583) teach that ultrasonic measurement of blood flow and characteristic can be assessed by characterizing improper blood circulation, i.e. differentiating normal and abnormal (inadequate or diffused blood flow).

5. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Taenzer* and *Ragauskas et al* as applied to claim 4 above, and further in view of *Michaeli* (US 6,328,694).

Taenzer and Ragauskas et al ('477) substantially disclosed all claimed features in claims 16 and 17. Michaeli further teaches that the measurement accuracy of the transcranial Doppler can be improved by use of acoustic window through bone, nasal or aural opening (col. 1, lines 37-56). Therefore, it would have been obvious to one having an ordinary skill in the art at the time the invention was made to apply the teachings of Taenzer and Ragauskas et al ('477) and to the teachings of Michaeli to achieve the claimed invention.

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*Allowable Subject Matter*

6. Claims 3 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William Jung, Ph.D. whose telephone number is 571-272-4739. The examiner can normally be reached on Mon-Fri 8:30 AM to 5 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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July 7, 2005

  
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